



Draft TMDL Report Development for Lake Michigan (nearshore) Mercury and Polychlorinated Biphenyls

Background

Over the last 30 years, waters in Illinois have been monitored for chemical, biological, and physical conditions. In some cases, the condition of those rivers and lakes falls short of the need to support basic water quality use goals. These waters are deemed impaired since they cannot meet use expectations set for them under state and federal law. When this happens Total Maximum Daily Load (TMDL) reports are developed for impaired waters to determine the maximum amount of a pollutant a water body can receive and still meet water quality standards and support its designated uses. Designated uses include aquatic life, indigenous aquatic life, public and food processing water supply, primary contact (e.g., swimming, water skiing), secondary contact (e.g., boating, fishing), fish consumption, and aesthetic quality.

TMDLs are done in stages to allow for public involvement and input. TMDL development in Illinois begins with data compilation—water quality, point source discharge, precipitation, soils, geology, topography, and land use—within the specific watershed. The data are analyzed to characterize and understand the impaired waterbodies and contributing sources. Illinois Environmental Protection Agency (IEPA) then assesses the tools necessary to develop the TMDL. In most cases, computer models are used to calculate pollutant loads and link those loads to the water body condition. In the case of the mercury and polychlorinated biphenyl TMDLs, models have been used to link pollutant loads to fish tissue concentrations. Draft TMDL reports for mercury and polychlorinated biphenyls have been completed for 56 impaired Illinois Lake Michigan (nearshore) waters, and these reports summarize the available data, TMDL targets, modeling, required load reductions and allocations, as well as implementation plans and monitoring recommendations..

The Illinois Lake Michigan Nearshore Impaired Segments

Lake Michigan beaches and their coastal waters are a highly valued societal and ecological resource. These waters are widely popular, highly used, and are monitored by Illinois EPA. There are 51 beach segments and 4 harbors along the Illinois Lake Michigan shoreline that are included on IEPA's impaired waters listing for mercury and PCBs, in addition to the Lake Michigan nearshore area extending 5 km from the coastline. For this TMDL, "shoreline segment" is used in place of "beach" because not all 51 segments are considered beaches as defined by the local management agencies. The maps accompanying this Fact Sheet show the location of the shoreline segments, the harbors and the nearshore open water segment. The impaired waterbody segments are shown in Figure 1, with additional detail shown in Figures 2 and 3.

Potential Pollutant Sources

Potential sources of mercury and polychlorinated biphenyls to the impaired segments include: hydrodynamic transport from the main body of Lake Michigan, atmospheric loading, MS4 stormwater loading, other NPDES-permitted point sources, flow reversals from the Chicago Area Waterways, and diffusion and/or resuspension from bed sediments.

Candidate TMDL Approaches

A Scoping Report previously described three candidate approaches for TMDL development. These are, in order of increasing complexity: 1) Proportionality Approach; 2) Steady State Mass Balance Approach, and 3) Time Variable Approach. Based on a review of the available data and the contributing sources, as well as IEPA and USEPA recommendations, the proportionality approach was selected and applied for the mercury and polychlorinated biphenyl TMDLs.

Draft TMDL Report Development

Draft TMDL reports have been developed for mercury and polychlorinated biphenyls for 56 impaired nearshore Illinois Lake Michigan waters. Each of these draft TMDL reports describes the project study area and available data, TMDL targets, source assessment, model application, TMDL development and allocation, and an implementation plan and

monitoring recommendations. The TMDL reports are available at: <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/reports/index>

For information on the assessment of Illinois waters, refer to the Integrated Report and 303(d) List at <http://www.epa.state.il.us/water/tmdl/303d-list.html>.

For more information on the TMDL program in Illinois, refer to: <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index>

If you have any questions, please contact Collin Stedman by phone at 217/782-3362 or email at Collin.Stedman@Illinois.gov.

Maps of the Impaired TMDL segments

- 1) Entire study area, showing all impaired segments as well as the study area watershed**
- 2) Maps of the four harbors**
- 3) Maps showing the 51 impaired shoreline/beach segments**

Figure 1. Study Area and Impaired Segments

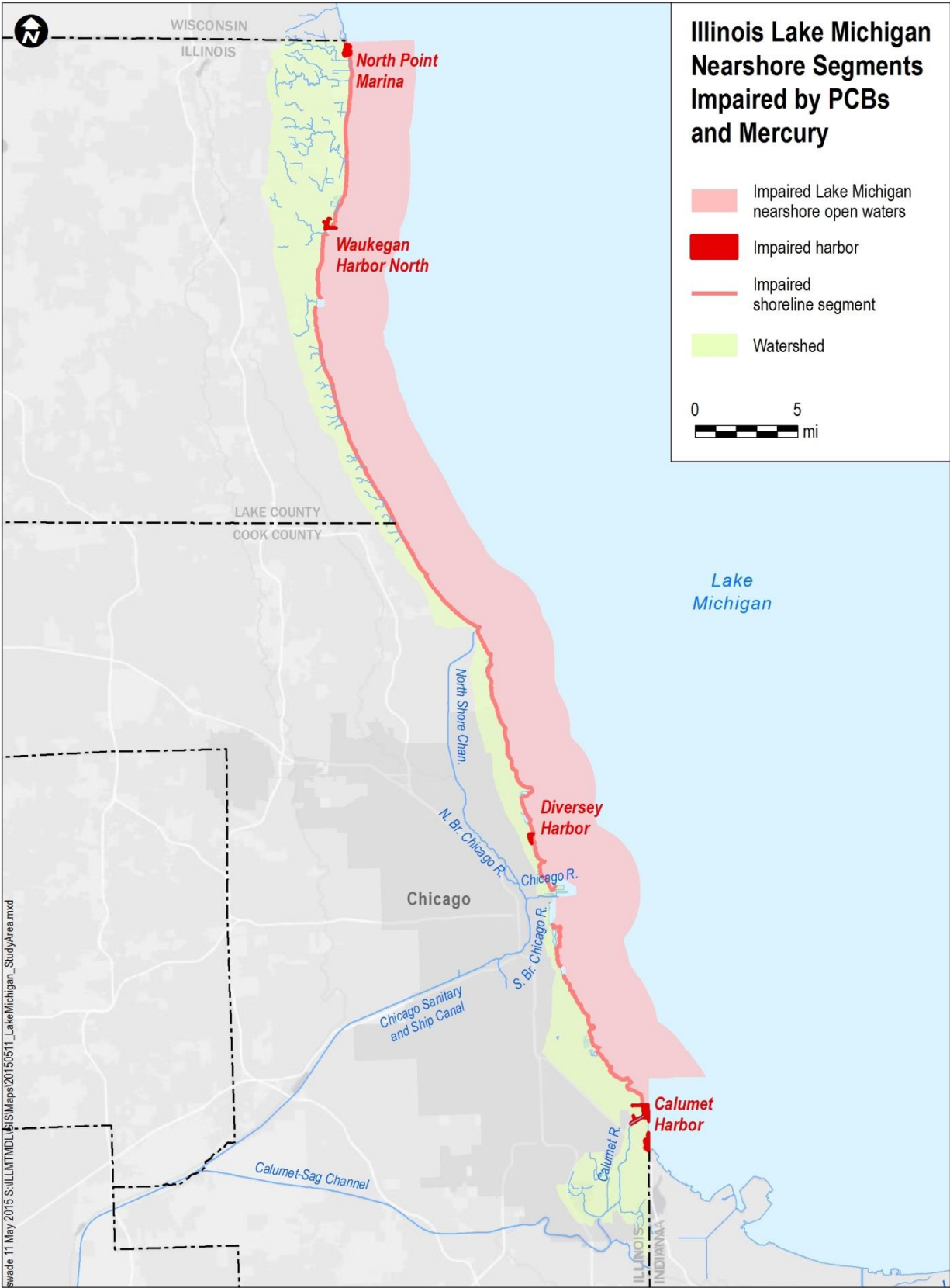
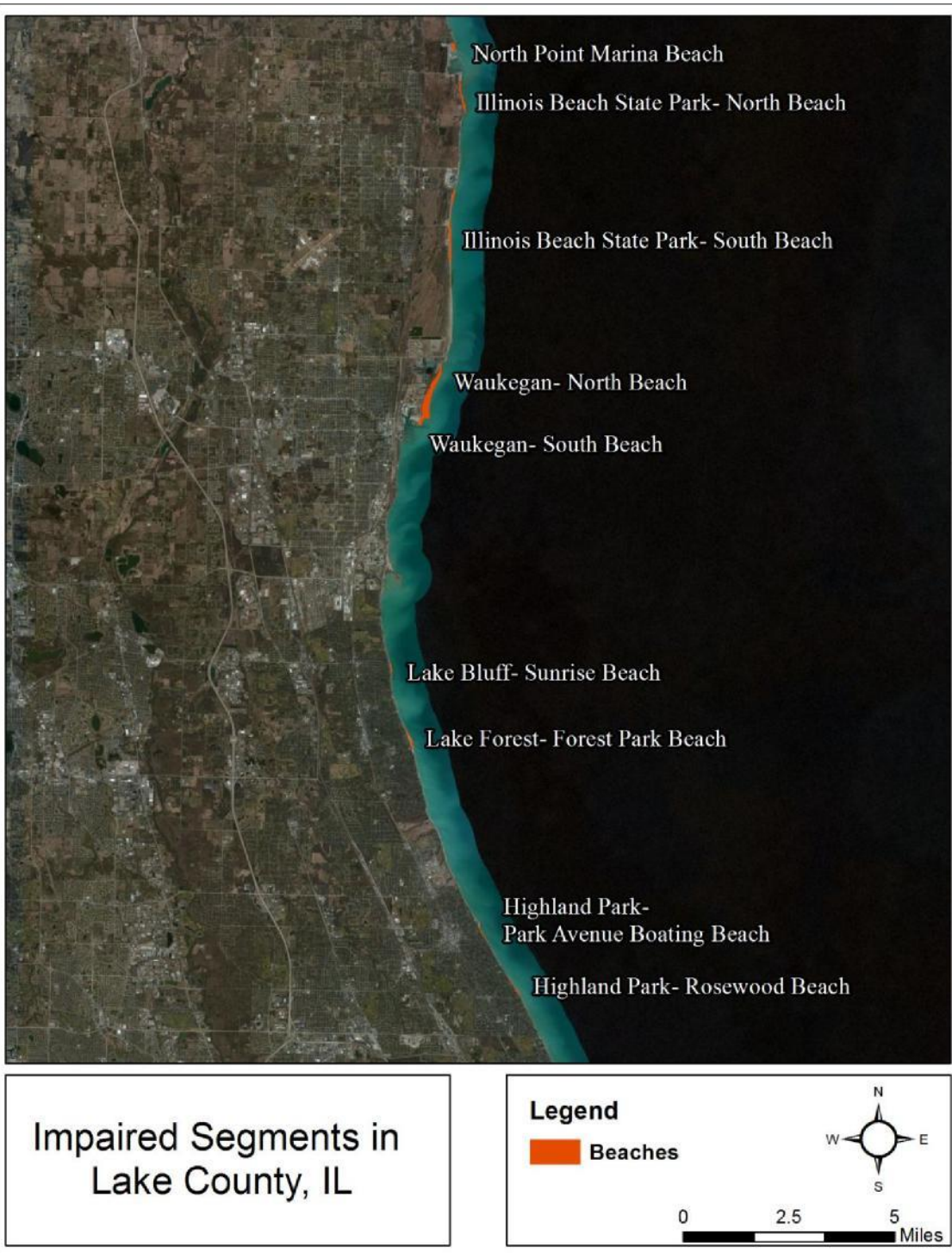


Figure 2. Impaired Harbors



Figure 3. Impaired Beach/Shoreline Segments

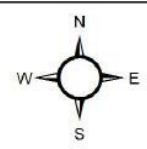




**Impaired Segments in
Northern Chicago, IL**

Legend

 Beaches/Shoreline



0 1.25 2.5
Miles

